



Freshwater Invertebrates

Newcomb's snail

Erinna newcombi

SPECIES STATUS:

Federally Listed as Threatened

State Listed as Threatened

IUCN Red List - Vulnerable

Endemic

SPECIES INFORMATION: Newcomb's snail is unique among Hawaiian lymnaeid snails in having a substantially reduced shell spire. The smooth black shell has a single whorl about six millimeters (one-fourth inch) long and three millimeters (one-eighth inch) wide. It likely feeds on algae and vegetation growing on submerged rocks. Eggs are attached to substrate and there are no widely dispersing larval stages. Little else is known about their life history.

DISTRIBUTION: Historically, Newcomb's snail occurred in ten watersheds on the island of Kaua'i. It now occurs at ten sites in six of those watersheds, mostly in the north and northeast parts of the island.

ABUNDANCE: 6000 to 7000 individuals, most occur in two of the ten sites. The population is stable.

LOCATION AND CONDITION OF KEY HABITAT: Newcomb's Snails do best in cool, clean perennial waters of moderate to high velocity at mid-elevations (200 – 400 meters, 650 – 1300 feet) on Kaua'i. This includes streams as well as some springs and seeps. It only occurs in areas protected from scouring stream flows of the main stream channel. Suitable habitat is often associated with overhanging waterfalls in the main channel of perennial streams supported by stable groundwater input or in smaller, spring-fed tributaries. The six watersheds where it currently exists and two of the watersheds where populations existed historically, have been listed as critical habitat in the Draft Recovery Plan. All of the key habitats are small in size, ranging from two to 30 square meters (22 to 320 square feet) in size.

THREATS:

- The main threat is from introduced predators. These include the rosy glandina snail (*Euglandina rosea*), and two marsh flies: *Sepedomerus macropus* and *Sepedon aenescens*. Other potential introduced predators include green swordtail fish (*Xiphophorus helleri*), bullfrogs (*Rana catesbiana*), and the wrinkled frog (*Rana rugosa*);
- Competition with introduced snails may also be a threat;
- Because of their very small area of distribution they are vulnerable to natural or man-made catastrophic events;

- Historical threats likely included the large-scale dewatering of streams for irrigation, including in the Hanapepe watershed from which the species was first described, but which no longer contains a population of Newcomb's snails. All of the existing populations occur above stream diversions. A water diversion was previously proposed for domestic use from Makaleha Springs and would have likely eliminated the snail population there. That project was denied necessary permits by the State Commission on Water Resource Management;
- Two of the six extant populations are on private land, the rest are on State owned lands.

CONSERVATION ACTIONS: In addition to common statewide and island conservation actions, specific actions include:

- Re-establish populations in two watersheds that formerly contained the species;
- Collaborate with the Commission on Water Resources Management and the Land Board to ensure adequate Instream Flow and biological integrity of riparian areas;
- Improve altered or diverted streams;
 - Modify or remove gratings or diversions to allow for instream passage;
 - Restore riparian vegetation to help decrease instream heating and reduce sediment loads;
 - Remove alien species;
 - Create pools in frequently dewatered stretches to provide safe usable habitat between flows.
- Continue developing GIS database and making it web-accessible;
- Create partnerships with the private landowners, the federal government, and interested NGO's to further the species conservation, especially in the context of preserving the structure and function of upland forest ecosystems and in-stream flows;
- Make sure all State and Federal agencies know of snail's location to prevent unintentional damage to habitat;
- Develop and implement a public outreach program.

MONITORING:

- Establish survey schedule to determine population size and distribution.

RESEARCH PRIORITIES:

- Improve understanding of the life history of Newcomb's snail;
- Study the population size and variability of the species;
- Understand the ecology of the introduced predators and potential competitors and limit their impact.

References:

Fish and Wildlife Service. (US) [USFWS]. 2004. Draft recovery plan for the Newcomb's Snail (*Erinna newcombi*). Portland, OR: U.S. Fish and Wildlife Service. 39 pp.

International Union for the Conservation of Nature and Natural Resources [Internet]. Threatened Red List. Available from: <http://www.redlist.org/search/search-expert.php> (accessed May 2005).